

Application Number 10/761,473
Response to Final Office Action mailed May 13, 2008

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A method of providing capture management in an implantable medical device, the method comprising:

monitoring for indicators of a likely increase in pacing threshold in the absence of a pacing threshold test search that comprises delivering pacing pulses; and
increasing a safety factor used in setting a pacing pulse output energy if an indicator of increased pacing threshold is detected.

Claim 2 (Original): The method of claim 1 further comprising:

setting a time interval during which the increased safety factor is maintained; and
restoring the safety factor to a programmed value after the time interval has expired.

Claim 3 (Currently Amended): The method of claim 2 wherein the duration of the time interval is set according to the type of indicator of increased pacing threshold that has been detected.

Claim 4 (Original): The method of claim 2 further comprising:

monitoring for indicators of increased threshold during the time interval; and
resetting the time interval for which the increased safety factor is maintained if a second indicator of increased pacing threshold is detected.

Claim 5 (Currently Amended): The method of claim 1 further comprising:

performing [[a]] the pacing threshold search after detecting an indicator of increased pacing threshold; and
reducing the increased safety factor back to a programmed value if the pacing threshold search yields a result.

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Claim 6 (Original): The method of claim 1, wherein indicators of increased threshold include a change in lead impedance.

Claim 7 (Original): The method of claim 1, wherein indicators of increased threshold include arrhythmia detections.

Claim 8 (Original): The method of claim 7, wherein the arrhythmia detections include arrhythmia detections exceeding a predetermined duration.

Claim 9 (Original): The method of claim 1, wherein indicators of increased threshold include a pacing mode switch.

Claim 10 (Original): The method of claim 1, wherein indicators of increased threshold include a refractory sensed event or an event triggered by a refractory sensed event.

Claim 11 (Currently Amended): An implantable medical device, comprising:
a pulse generator for delivering pacing pulses;
at least one electrode in electrical communication with the pulse generator for delivering the pacing pulses to cardiac tissue; and
a microprocessor for controlling the pulse generator, receiving sensed data from the at least one electrode, wherein the sensed data includes an indicator of increased pacing threshold, wherein the sensed data is generated in the absence of a pacing threshold search that comprises delivery of the pacing pulses, and increasing a safety factor used for setting the pacing pulse energy delivered by the pulse generator when the indicator of increased pacing threshold is detected.

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Claim 12 (Currently Amended): An implantable medical device (IMD) comprising:

means for monitoring for indicators of a likely increase in pacing threshold in the absence of a pacing threshold test search that comprises delivering pacing pulses; and

means for increasing a safety factor used in setting a pacing pulse output energy if an indicator of increased pacing threshold is detected.

Claim 13 (Original): The IMD of claim 12 further comprising:

means for setting a time interval during which the increased safety factor is maintained;

and

means for restoring the safety factor to a programmed value after the time interval has expired.

Claim 14 (Currently Amended): The IMD of claim 13 wherein the duration of the time interval is set according to the type of indicator of increased pacing threshold that has been detected.

Claim 15 (Currently Amended): The IMD of claim 12 further comprising:

means for performing [[a]] the pacing threshold search after detecting an indicator of increased pacing threshold; and

means for reducing the increased safety factor back to a programmed value if the pacing threshold search yields a result.

Claim 16 (Original): The IMD of claim 13, wherein indicators of increased threshold include a change in lead impedance.

Claim 17 (Original): The IMD of claim 13, wherein indicators of increased threshold include arrhythmia detections.

Claim 18 (Original): The IMD of claim 17, wherein the arrhythmia detections include arrhythmia detections exceeding a predetermined duration.

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Claim 19 (Original): The IMD of claim 13, wherein indicators of increased threshold include a pacing mode switch.

Claim 20 (Original): The IMD of claim 13, wherein indicators of increased threshold include a refractory sensed event or an event triggered by a refractory sensed event.

Claim 21 (New): The implantable medical device of claim 11, wherein the at least one electrode is coupled to a lead, and the indicator comprises at least one of an arrhythmia detection, an arrhythmia episode duration, a pacing mode switch of the pulse generator, a refractory sensed event or an impedance change of the lead.

Claim 22 (New): An implantable medical device, comprising:

- . a pulse generator that delivers pacing pulses;
- at least one electrode in electrical communication with the pulse generator, wherein the at least one electrode is configured to deliver the pacing pulses to cardiac tissue; and
- a microprocessor that controls the pulse generator, receives sensed data from the at least one electrode, wherein the sensed data includes an indicator of increased pacing threshold, and wherein the indicator is associated with a compromised ability of the microprocessor to perform a pacing threshold search that comprises delivery of the pacing pulses, and increase a safety factor used for setting the pacing pulse energy delivered by the pulse generator when the indicator of increased pacing threshold is detected.